



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER OF PATENTS AND TRADEMARKS  
Washington, D.C. 20231  
www.uspto.gov

| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|-----------------|-------------|----------------------|---------------------|------------------|
| 09/206,027      | 12/04/1998  | BARNEY M. COHEN      | AMAT/3049/MD        | 4950             |

7590 07/23/2002

APPLIED MATERIALS INC  
PATENT COUNSEL  
P O BOX 450 A  
SANTA CLARA, CA 95052

EXAMINER

VINH, LAN

| ART UNIT | PAPER NUMBER |
|----------|--------------|
|----------|--------------|

1765

DATE MAILED: 07/23/2002

25

Please find below and/or attached an Office communication concerning this application or proceeding.

11/1F=25

**Advisory Action**

Application No.

09/206,027

Applicant(s)

COHEN ET AL.

Examiner

Lan Vinh

Art Unit

1765

--The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

THE REPLY FILED 16 July 2002 FAILS TO PLACE THIS APPLICATION IN CONDITION FOR ALLOWANCE. Therefore, further action by the applicant is required to avoid abandonment of this application. A proper reply to a final rejection under 37 CFR 1.113 may only be either: (1) a timely filed amendment which places the application in condition for allowance; (2) a timely filed Notice of Appeal (with appeal fee); or (3) a timely filed Request for Continued Examination (RCE) in compliance with 37 CFR 1.114.

**PERIOD FOR REPLY [check either a) or b)]**

- a) ☐ The period for reply expires \_\_\_\_\_ months from the mailing date of the final rejection.
- b) ☒ The period for reply expires on: (1) the mailing date of this Advisory Action, or (2) the date set forth in the final rejection, whichever is later. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of the final rejection. ONLY CHECK THIS BOX WHEN THE FIRST REPLY WAS FILED WITHIN TWO MONTHS OF THE FINAL REJECTION. See MPEP 706.07(f).

Extensions of time may be obtained under 37 CFR 1.136(a). The date on which the petition under 37 CFR 1.136(a) and the appropriate extension fee have been filed is the date for purposes of determining the period of extension and the corresponding amount of the fee. The appropriate extension fee under 37 CFR 1.17(a) is calculated from: (1) the expiration date of the shortened statutory period for reply originally set in the final Office action; or (2) as set forth in (b) above, if checked. Any reply received by the Office later than three months after the mailing date of the final rejection, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

1. ☐ A Notice of Appeal was filed on \_\_\_\_\_. Appellant's Brief must be filed within the period set forth in 37 CFR 1.192(a), or any extension thereof (37 CFR 1.191(d)), to avoid dismissal of the appeal.
2. ☐ The proposed amendment(s) will not be entered because:
- (a) ☐ they raise new issues that would require further consideration and/or search (see NOTE below);
  - (b) ☐ they raise the issue of new matter (see Note below);
  - (c) ☐ they are not deemed to place the application in better form for appeal by materially reducing or simplifying the issues for appeal; and/or
  - (d) ☐ they present additional claims without canceling a corresponding number of finally rejected claims.

NOTE: \_\_\_\_\_

3. ☐ Applicant's reply has overcome the following rejection(s): \_\_\_\_\_
4. ☐ Newly proposed or amended claim(s) \_\_\_\_\_ would be allowable if submitted in a separate, timely filed amendment canceling the non-allowable claim(s).
5. ☒ The a) ☐ affidavit, b) ☐ exhibit, or c) ☒ request for reconsideration has been considered but does NOT place the application in condition for allowance because: See attachment.
6. ☐ The affidavit or exhibit will NOT be considered because it is not directed SOLELY to issues which were newly raised by the Examiner in the final rejection.
7. ☒ For purposes of Appeal, the proposed amendment(s) a) ☐ will not be entered or b) ☒ will be entered and an explanation of how the new or amended claims would be rejected is provided below or appended.

The status of the claim(s) is (or will be) as follows:

Claim(s) allowed: \_\_\_\_\_

Claim(s) objected to: \_\_\_\_\_

Claim(s) rejected: 1, 3-8, 10-40

Claim(s) withdrawn from consideration: \_\_\_\_\_

8. ☐ The proposed drawing correction filed on \_\_\_\_\_ is a) ☐ approved or b) ☐ disapproved by the Examiner.
9. ☐ Note the attached Information Disclosure Statement(s) (PTO-1449) Paper No(s). \_\_\_\_\_
10. ☐ Other: \_\_\_\_\_

***Response to Arguments***

1. Applicant's arguments filed 7/16/2002 have been fully considered but they are not persuasive.

In traversing the examiner's position that the evidence of nonobviousness (Fig. 4 in the specification) does not commensurate in scope with claims 8, 14, 31, 36, the applicants argue that Fig. 4 shows that the etch rate increases as the volume of argon decreased from 75% by volume to 25% by volume while the volume of helium is increased as shown in page 9 of the specification. Upon reviewing Fig. 4 and page 9 of the specification as well as the recited claim language of claims 8, 14, 31, 36, the examiner disagrees with the applicants. Claims 8, 14, 31, 36 recite the language of "increasing the helium content of the plasma to increase etching....the gas mixture comprises less than about 75% by volume of Ar". Fig. 4 and page 9 of the specification shows that the etch rate improves/increases until the argon volume is reduced to 25% by volume while the volume of helium increased because the plasma mixture consisting of 25% of Ar, 5% of hydrogen and helium. However, the examiner notes that Fig. 4 also shows that when the Ar volume is reduced to 40% by volume ( less than about 75%) although the volume of helium increases, the etch rate decreased. Hence, the examiner asserts that evidence of nonobviousness (Fig. 4 in the specification) does not commensurate in scope with claims 8, 14, 31, 36.

It is argued that the Guinn reference has not provided as to which parameters are result-effective variable. This argument is not found persuasive because as recited in col 4, lines 3-6 of Guinn Guinn teaches that wherein a discrete processing parameter (

Art Unit: 1765

temperature, flow rate, pressure ) is varied to change the etch rate. Varying a processing parameter such as a flow rate to change the etch rate certainly reads on using the flow rate/parameters as a result-effective variable.

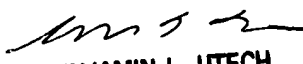
The applicants also argue that the Examiner has mistakenly taken Kennard 's teaching of "adding a flow volume of helium to a plasma etching gas mixture" to be teaching of "increasing a flow volume of helium to a plasma etching mixture". The examiner disagrees because since Kennard discloses adding a high flow of helium ( greater than about 65 % of the total volume ) to a gas mixture ( col 3, lines 57-58 ), adding a high flow of helium ( greater than about 65 % of the total volume ) to a gas mixture reads on increasing a flow volume of helium to a gas mixture.

### ***Conclusion***

2. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Lan Vinh whose telephone number is 703 305-6302. The examiner can normally be reached on M-F 8:30-5:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Benjamin Utech can be reached on 703 308-3836. The fax phone numbers for the organization where this application or proceeding is assigned are 703 872-9310 for regular communications and 703 872-9311 for After Final communications.

LV  
July 21, 2002

  
**BENJAMIN L. UTECH**  
**SUPERVISORY PATENT EXAMINER**  
**TECHNOLOGY CENTER 1700**